

IB MYP YEAR
YEAR 7 MATHEMATICS
CIRCLE PROJECT
Circle, Circumference, Diameter & π

Name: _____ ()

Class: 7 _____

Suggested time allocation: 4 periods

Criterion B	/ 8	Criterion C	/ 8
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TYPE OF ASSIGNMENT:

Formative project assessment (not included in report card)

THE ASSIGNMENT WILL COVER THE FOLLOWING:

- ♦♦ To solve problems involving circles, circumference, radius and (pi) π
- ♦♦ To research, find the pattern and prove your findings
- ♦♦ To use your skills learned in class

INSTRUCTIONS:

- ♦♦ Read the instructions for all questions carefully
- ♦♦ All work, steps and proper units must be shown
- ♦♦ Work needs to be presented in a poster, booklet, brochure or PowerPoint – your choice
- ♦♦ Pencil, colour pens/pencils and pen may also be used
- ♦♦ Protractor, compass and ruler are necessary
- ♦♦ Any non-electronic dictionaries, electronic devices, such as translators or calculators, are allowed
- ♦♦ Use of laptop is necessary
- ♦♦ This is an individual task
- ♦♦ You might start your work in class. If you can't finish each stage in a lesson, you might also work at home.
You may work at your own pace and move onto Part 2 when you are ready.

CRITERIA:

Criterion B: INVESTIGATING PATTERNS

Achievement level	Task Specific Rubric	IBO Published descriptor (MYP3)
0	The student does not reach a standard described by any of the descriptors given below.	The student does not reach a standard described by any of the descriptors below.
1–2	Able to show and apply some of the ideas of pattern(s) related to π /pi found.	The student is able to: i. apply , with teacher support, mathematical problem-solving techniques to discover simple patterns ii. state predictions consistent with patterns.
3–4	Able to present an experiment to discover pattern(s) of π /pi. Suggest relationships between circumference, diameter, radius and π /pi consistent with findings.	The student is able to: i. apply mathematical problem-solving techniques to discover simple patterns ii. suggest relationships and/or general rules consistent with findings.
5–6	Able to present an experiment to discover pattern(s) of π /pi. Describe relationships between circumference, diameter, radius and π /pi consistent with findings. Report on his/her own finding from the experiment, and able to give a conclusion.	The student is able to: i. select and apply mathematical problem-solving techniques to discover complex patterns ii. describe patterns as relationships and/or general rules consistent with findings iii. verify these relationships and/or general rules.
7–8	Able to present an experiment to discover pattern(s) of π /pi. Describe relationships between circumference, diameter, radius and π /pi consistent with correct findings. Further justify his/her findings from the experiment, by giving more examples with explanations.	The student is able to: i. select and apply mathematical problem-solving techniques to discover complex patterns ii. describe patterns as relationships and/or general rules consistent with correct findings iii. verify and justify these relationships and/or general rules.

Criterion C: COMMUNICATING

Achievement level	Task specific rubrics	IBO Published Descriptor (MYP 3)
0	The student does not attempt or not reach a standard described by any of the descriptors given.	The student does not reach a standard described by any of the descriptors given below.
1-2	The student shows a limited use of mathematical language and symbol. Labels and headings are often incorrect or absent . The lines of reasoning are often difficult to follow .	The student is able to: i. use limited mathematical language ii. use limited forms of mathematical representation to present information iii. communicate through lines of reasoning that are difficult to interpret.
3-4	The student shows sufficient use of mathematical language. Headings and labels have been attempted , but not always correct . The lines of reasoning are understandable , but not always clear or complete . Information is adequately organized.	The student is able to: i. use some appropriate mathematical language ii. use different forms of mathematical representation to present information adequately iii. communicate through lines of reasoning that are able to be understood, although these are not always clear iv. adequately organize information using a logical structure.
5-6	The student shows an appropriate use of mathematical language, including units. Nearly all headings, labels and relevant keys are present and correct . Transfer the experimental data to make conclusion with some success . The lines of reasoning are clear , but not always concise or complete . Nearly all important information and steps are concise, logical and complete .	The student is able to: i. usually use appropriate mathematical language ii. usually use different forms of mathematical representation to present information correctly iii. move between different forms of mathematical representation with some success iv. communicate through lines of reasoning that are clear although not always coherent or complete v. present work that is usually organized using a logical structure.
7-8	The student consistently shows an appropriate use of mathematical language, including units. All headings, labels and relevant keys are present and correct . Transfer the experimental data to make conclusion successfully . The lines of reasoning are consistently clear, concise and complete . All important information and steps are concise, logical and complete .	The student is able to: i. consistently use appropriate mathematical language ii. use different forms of mathematical representation to consistently present information correctly iii. move effectively between different forms of mathematical representation iv. communicate through lines of reasoning that are complete and coherent v. present work that is consistently organized using a logical structure.

Introduction

(Pi) π is one of the most important findings in the Mathematics world. In this project, we are going to further explore pi π and the patterns found around it.

Stage I: Research (Suggested time: 1 lesson)

Question: How was (Pi) π invented / discovered?

Instructions:

- 1) Use your laptop or books from the library to research how π was invented / discovered
- 2) Record your findings
- 3) Write down any rules or patterns
- 4) Find 5 fun and interesting facts about π
- 5) Display your findings as a draft in a neat and orderly manner

Stage II: Planning (Suggested time: 1 lesson)

Base on your findings from Stage I, plan an experiment / activity to prove the pattern and rules is correct.

Do make sure you write down all the materials you need and bring them to school for the next stage.

Stage III: Action (Suggested time: 1 lesson)

Within this stage, you are going to deliver the activity you planed.

- 1) Measure and draw your circular objects or picture and label your diagrams. (Hints: not less then 3 objects should be tested)
- 2) Record all the data you collected from the activity.
- 3) Prove the pattern you have found, does it work for all of your circles? (Show calculations)

Stage IV: Presentation (Suggested time: 1 lesson)

Instructions:

Organize all your findings and choose one of the following methods to present your finding.
a poster,
an information booklet,
a brochure,
PowerPoint.

All work should be neatly displayed in your presentation with relevant headings and labels. Drawings, tables and structured paragraphs are strongly encouraged.

-- END OF TASK --